WEATHER WISE

Fast Facts
WEIRD WEATHER AWARDS

1. LONGEST WINTER: In the United States, the year 1816 was called "the year without a summer." It snowed on June 6th and June 8th in Vermont, New Hampshire, Maine, and New York State. There was also frost in August and again in September.

***2.** SUNNIEST PLACE: St. Petersburg, Florida. Starting in February of 1967, there were 768 straight days of sunshine.*

3. RAINIEST PLACE: Mt. Waialeale on Kauai, Hawaii. It usually rains there 350 days each year.

4. FOGGIEST PLACE: The Libby Islands off the coast of Maine. There is an average of 1554 hours of fog there each year.

5. LONGEST-LASTING RAINBOW: There was a rainbow that lasted for three hours in North Wales, Pennsylvania, in 1979.

6. COLDEST PLACE WHERE PEOPLE LIVE: Oymyakon, Siberia, in the USSR. In 1964, the temperature there dropped to -96° F.

7. HOTTEST PLACE WHERE PEOPLE LIVE: Al' Aziziyah, Libya. It was 136.4° F in the shade there in 1922.

Use a graphic arts program to make computer certificates for each of the above. Be sure to include a funny graphic!

WEATHER POEMS

TRY THIS!

Weather can be inspiring! It inspired these two verses by professional poets. Boot up your word processor or a poetry writing program to create your own weather poems.

RAIN

Summer rain
is soft and cool,
so I go barefoot
in a pool.

But winter rain
is cold, and pours,
so I must watch it
from indoors.

Myra Cohn Livingston

FIRST SNOW

Snow makes whiteness
where it falls.
The bushes look like
popcorn-balls.
The places where I always play
Look like somewhere else today.

Marie Louise Allen

ROLE PLAY

Name That Cloud

Clouds are made up of drops of water or ice crystals high in the sky. Look at the many different kinds of clouds on this poster. The clouds have names based on how high they are, and what they look like. The different clouds bring different weather.

What kind of clouds are in your part of the sky? Use a data base program to keep a Class Cloud Watch. Set up a simple data record like the one below. At the same time each day, look at the clouds and the weather, and enter the information in a new data record. After two weeks or so of the Cloud Watch, search and sort the data to answer questions like: Which clouds appear most often at this time of year? Do low, dark nimbostratus clouds always bring rain? What kinds of clouds do you see the day *after* a storm?

SAMPLE DATA RECORD
Date:
Clouds:
Weather:

CIRRUS
thin, feathery clouds fair, cool weather

CUMULUS
fluffy, white clouds fair weather

CUMULONIMBUS
black storm clouds thunder and rain

NIMBOSTRATUS
low, dark cloud rain

STRATUS
low, gray cloud drizzle

Newsline

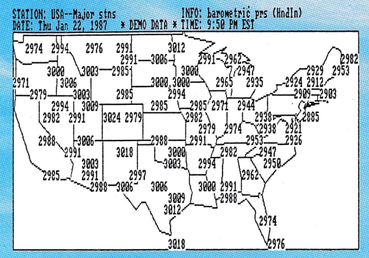
Computers & Weather

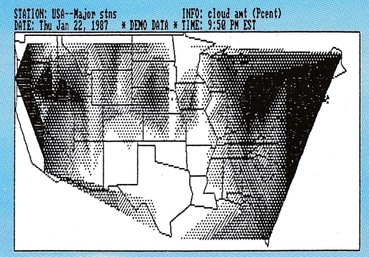
Keeping track of the weather takes a lot of work—and a lot of computer power!

The scientists who study the weather are called *meteorologists*. Their biggest job is to forecast (look ahead) and predict what the weather will be like before it happens. Their predictions help farmers know when the best time is to plant their crops. They help sailors know when a dangerous storm is brewing out at sea. They can even help you decide whether to take your umbrella to school tomorrow!

Meteorologists at the National Weather Service in Washington, D.C., use a *supercomputer* to help predict the weather all over the world. The supercomputer can handle millions of pieces of information at once. It uses this information to draw electronic maps showing what the world's weather may be like for the next few days.

To tell what the weather will be like in your hometown, meteorologists use personal computers to get local weather information from the supercomputer in Washington. They add in information about what the local weather is like right now. Then the meteorologists use all they know about your hometown's usual weather to put together the forecast you see on TV or in the newspaper.





These computer weather maps were made on a personal computer with a program called Accu-Weather Forecaster.

The top map shows barometer readings around the country. The bottom map shows cloud cover.

Jack Frost Nipping at Your...Computer?

TRY THIS!

DID YOU EVER WAKE UP ON A clear winter morning to find your window covered with tiny, frozen "snowflakes"? The window is covered with frost! Frost is made from water droplets that freeze when the temperature drops below 32° F. But some make-believe stories say that an elf called Jack Frost paints the windows with these patterns.

Use the BASIC program below to put Jack Frost inside your computer. (The program will run on Apple computers only.) Put your computer in BASIC and type in the program. Then type RUN FROST and press RETURN. Can you see Jack Frost at work?

```
10 REM FROST
20 HOME : CLEAR
30 FOR Y = 1 TO 25
40 X = INT (38 * RND (1)) + 1
50 Z = INT (22 * RND (1)) + 1
60 HTAB (X) : VTAB (Z) : PRINT "*"
70 NEXT Y
80 VTAB (23)
90 END
```

Teaching and Computers Poster Series.
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For reprint permission, thanks to Harcourt, Brace, Jovanovich for "Rain" from WHISPERS AND OTHER POEMS by Myra Cohn Livingston, 1958; and to Harper and Row for "First Snow" from A POCKETFUL OF RHYMES by Marie Louise Allen, 1939.

COPY

NOTES

WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

TEACHER'S GUIDE

It's January — what could be a better topic for discussion than the weather? This month's poster is a great place to start. It shows how computers are used in weather forecasting, describes (and helps kids catalog) different kinds of clouds, and lists some facts about weird weather happenings. The poster also starts kids thinking creatively about the weather through poetry, and even provides a short BASIC program to put Jack Frost to work on the classroom computer screen. On the flipside of the poster are blackline masters that reinforce and extend the poster material.

USING THE POSTER

The poster is divided into five main sections. Here is how to get the most from each.

Computers and the Weather Start with this introduction to how meteorologists use computers to help predict the weather. Discuss with students why it's important for meteorologists in the United States to know what the weather is like all over the world *(because weather patterns move around the globe; for example, a storm out to sea may eventually end up on the U.S. coastline).* Invite a local meteorologist or weathercaster to come in and talk to your class. Your students might like to know more about the instruments used in weather watching (from thermometers to computers) and about important weather trends for your area. Or your class can create its own weather forecasts using a new computer program that provides guided access to "live" weather data: *The Accu-Weather Forecaster* (for IBM and Macintosh computers; requires modem for use), $89.95, Metacomet Software, P.O. Box 31337, Hartford, CT 06103.

Weather Poems Encourage kids to express their feelings about the weather through poetry. Use poetry software like *Poetry Express* (Mindscape) if children are having trouble getting started. Or use the word processor to create "shape" poems. To do this, have kids use tracing paper to outline a weather object (such as a cloud, sun, thermometer, or rainbow) and then tape the paper over the computer monitor. Children should then type their poems staying inside the tracing.

Name That Cloud Clouds are great weather indicators, and they're fun to look at and identify. There are many other types of clouds than just those shown on the poster. Have kids research different cloud types and report on them to the class. Then help them set up their Class Cloud Watch data base, using your data base program and the sample record on the front of the poster. (With older students, you might expand the data base to include fields for temperature, barometric pressure, wind speed/direction, and precipitation level and other weather variables. Students can gather data through direct observation and from TV or newspaper reports.) When the data base contains several weeks' worth of daily entries, assist students to search the file for local weather trends (such as cloudless skies on the windiest, coldest days). As an extension activity, students could use a graphing program to chart cloud occurrence and other weather variables.

Weird Weather Awards Even though scientists are getting better at predicting the weather, sometimes it does some pretty unexpected things — like snow in June. Have children read these weather stories, and then do some research to find other interesting facts, like the size of the largest hailstone or the largest raindrop. They can then use a graphics program like *Principal's Assistant* (Mindscape) or *Certificate Maker* (Springboard) to create humorous "Weird Weather Awards."

Jack Frost Nipping at Your-...Computer? This BASIC program for Apple computers will present a screen full of asterisks, which will remind children of frost on a window. Challenge your programmers to add "snowflakes" to the window by changing the values for Y in line 30. To make the program present a new pattern every few seconds, add these lines:

```
91 FOR D = 1 TO 200: NEXT D
92 GOTO 20
```

WORKSHEET ANSWERS

Reading the Thermometer — This worksheet will help introduce primary graders to the thermometer. Tell students that the thermometer contains mercury, which rises as the temperature goes up, and falls as the temperature goes down. Tell them that they can read the temperature by looking at the numbers on the thermometer next to the top of the mercury.

The answers to the worksheet are: **1.** 32 (the temperature at which water freezes); **2.** 212 (the temperature at which water boils); **3.** 70 (a typical summer temperature); **4.** 0 (a very cold winter temperature). **Bonus:** Responses will vary.

Reading a Weather Map — This worksheet introduces intermediate students to the skills needed to read a weather map.

The worksheet answers are as follows: **1.** Detroit, Salt Lake City; **2.** Seattle, New York; **3.** 15; **4.** Los Angeles; **5.** Dallas; **6.** Answers will vary. **Bonus:** It will gradually get cloudy and start to snow as the low pressure system moves closer. The temperature will drop as the cold front advances.

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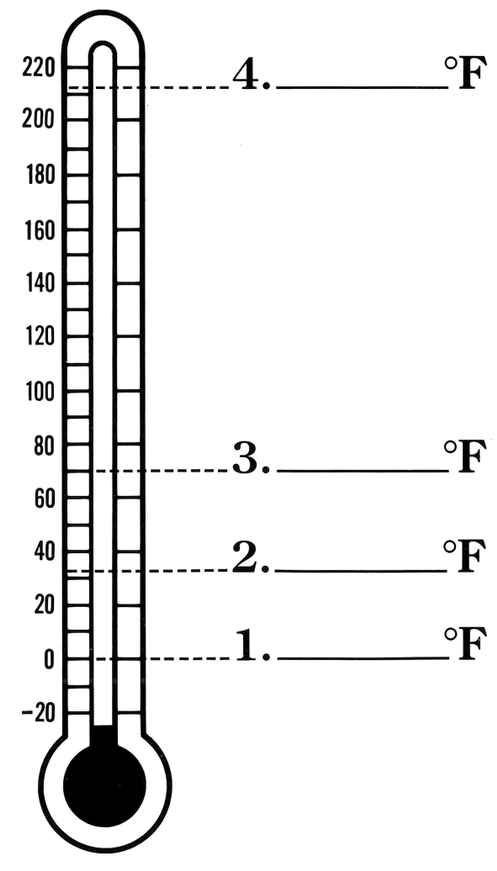
PRIMARY

WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

NAME: _____

READ THE THERMOMETER

DIRECTIONS: Look at the thermometer below. The mercury is only at the bottom of the thermometer. Use a black crayon to color in the mercury up to line 1. What temperature is this? Write the temperature in the blank next to line 1. Next, color in the mercury up to line 2, and write this new temperature in the blank next to line 2. Do the same things for line 3 and line 4.



BONUS: Draw a picture of the clothes you would wear if the temperature was 32°F.

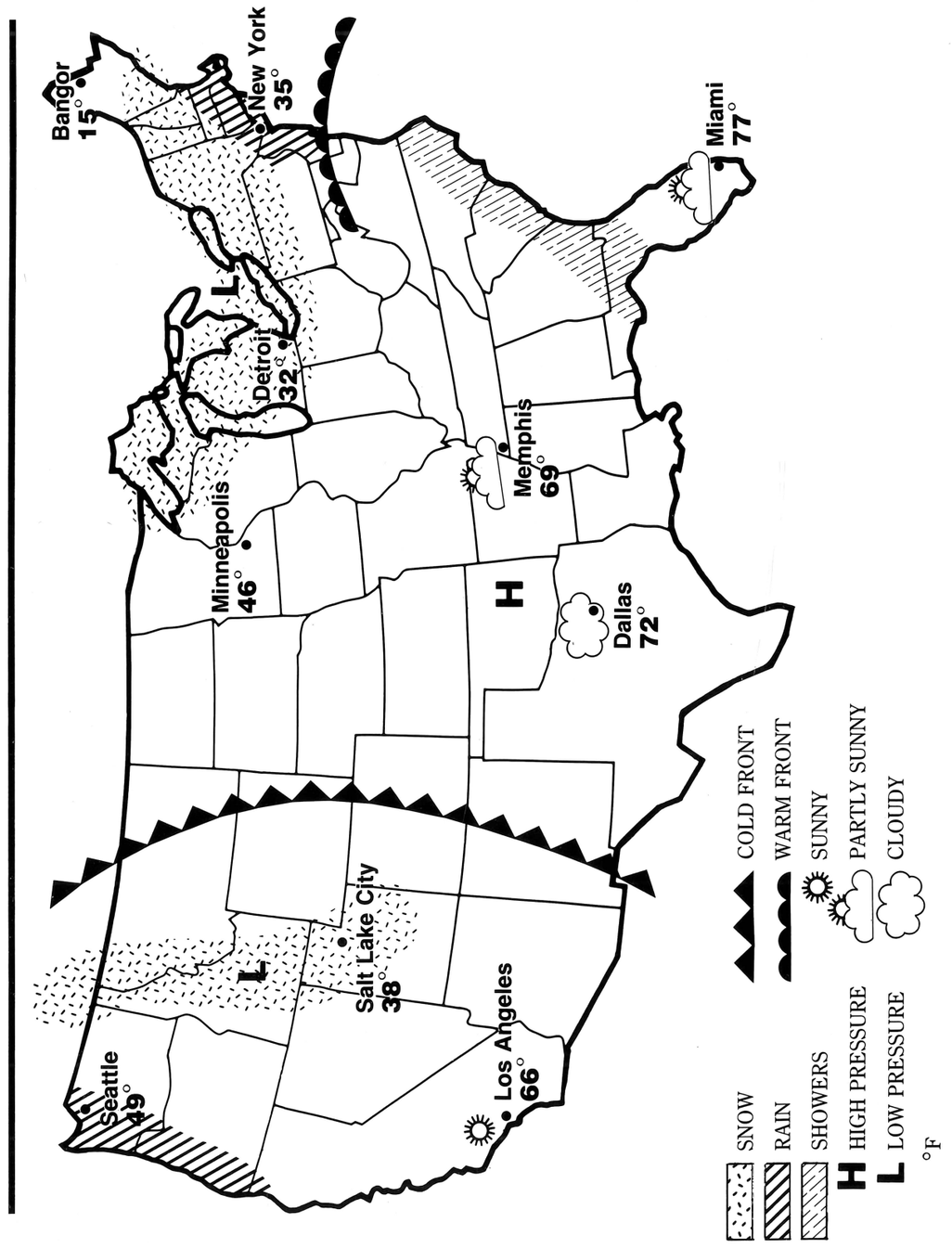
COPY (page 1)

INTERMEDIATE

WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

NAME: _____

READING A WEATHER MAP



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(page 2) COPY

INTERMEDIATE

WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

NAME: _____

READING A WEATHER MAP

DIRECTIONS: A weather map can tell you what the weather is like now, but it can also help predict the weather. Look at the weather map on page one. It shows a typical day in January in the United States. Then use the information in the fact box to answer the questions about the weather map.

FACT BOX

Here are some weather facts that will help you answer the questions about the weather map.

- In the Northern Hemisphere (where the United States is), the weather moves from west to east.
- High pressure usually brings clear skies, and low pressure brings clouds.
- A cold front is a mass of air that has been made cool by the land (or water) underneath it. The symbol for a cold front shows where the front edge of the cold air mass is located.
- A warm front is air that has been made warmer. The symbol for a warm front goes in front of the warm air mass.

1. In which of the cities shown is snow falling? _____
2. In which cities is it raining? _____
3. What is the temperature in Bangor? _____
4. In which city is the sun shining? _____
5. In which city is it cloudy? _____
6. What do you think the weather is like in your city? _____

BONUS: If the cold front by Salt Lake City keeps moving east, what do you think the weather in Minneapolis will be like over the next few days?